Cotton/Soybean Insect Newsletter

Volume 14, Issue #8 Edisto Research & Education Center in Blackville, SC 19 July 2019

Pest Patrol Alerts

The information contained herein each week is available via text alerts that direct users to online recordings. I will update the short message weekly for at least as long as the newsletter runs. After a new message is posted, a text message is sent to alert users that I have recorded a new update. Users can subscribe for text message alerts for my updates in two easy steps. Step one: register by texting **pestpat7** to 97063. Step two: reply to the confirmation text you receive by texting the letter "y" to complete your registration. Pest Patrol Alerts are sponsored by Syngenta.

Updates on Twitter

When noteworthy events happen the in the field, I will be sending them out quickly via Twitter. If you want to follow those quick updates, follow me at @bugdocisin on Twitter.

Scouting Workshops

Your ag-focused county agents and I will be offering some in-field scouting workshops for cotton and soybean insects this summer. The trainings will be free to attend, start in the morning, include lunch, and end shortly after that. The dates for those interactive workshops are:

- ~~18 July 2019 in Cameron, SC~~. Completed and a big success. Thanks to Charles and Jonathan!
- 25 July 2019 at the Lowrys Community Center in Chester, SC. Flyer attached to the email.
- 6 August 2019 at the Edisto REC near Blackville, SC. Flyer attached to the email.

Go get trained or refresh your scouting skills at a scouting workshop!

News from Around the State

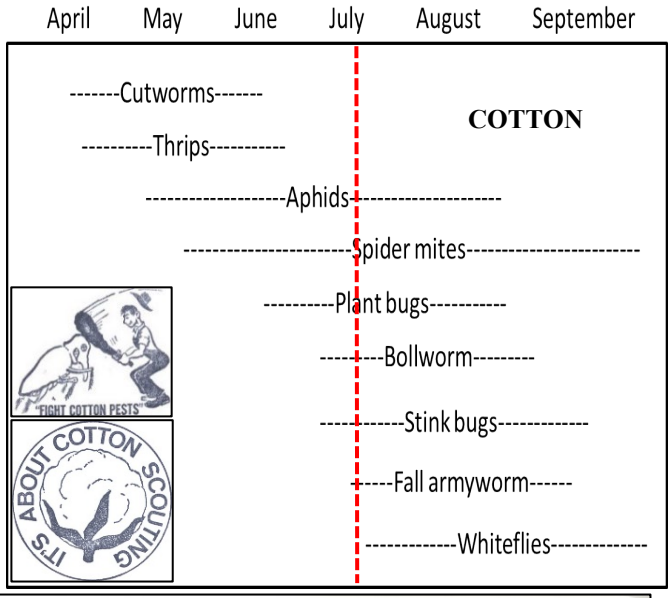
Jay Crouch, county agent covering much of the Upstate counties, reported that they are "starting some stink bug sprays in cotton, and adult kudzu bugs are showing up [in soybeans]- fairly high numbers in spotty places."

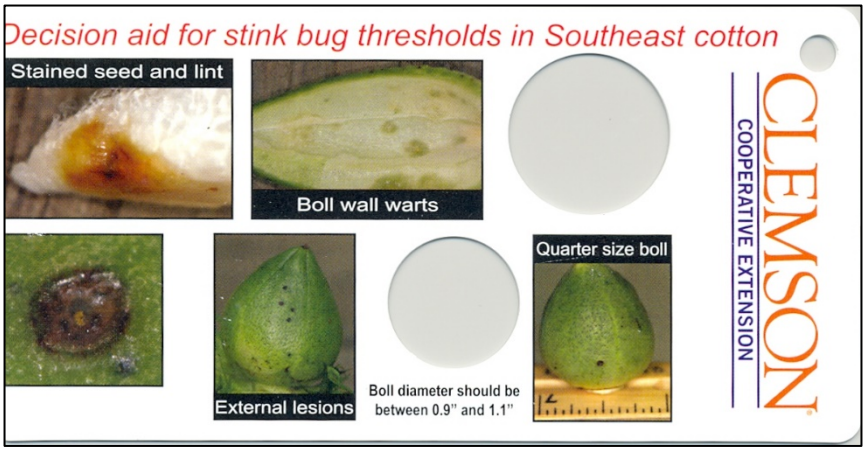
Cotton Situation

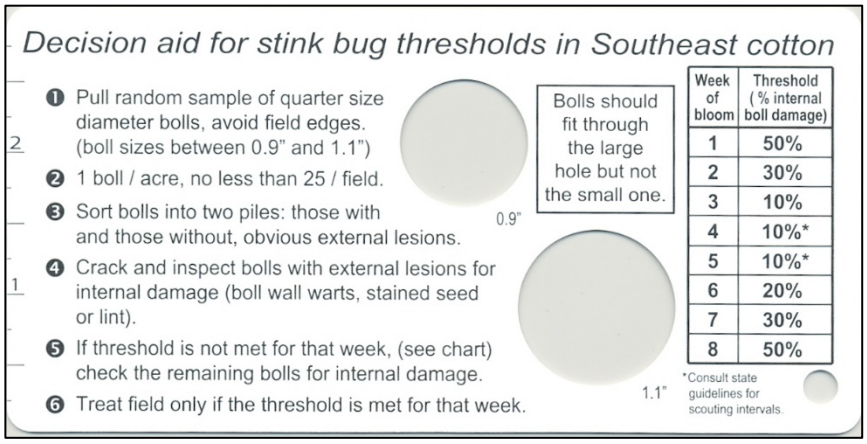
As of 14 July 2019, the USDA NASS South Carolina Statistical Office estimated that about 68% of the crop is squaring, compared with 65% at this time last week, 61% at this time last year, and 69% for the 5-year average. About 34% of the crop is setting bolls, compared with 24% at this time last week, 19% at this time last year, and 28% for the 5-year average. The condition of the crop was described as 6% excellent, 66% good, 25% fair, 3% poor, and 0% very poor. These are observed/perceived state-wide averages.

Cotton Insects

Our current place on time on the chart to the right goes through numerous pests now, including aphids, spider mites, plant bugs, bollworm, stink bugs, and fall armyworm. We have observed populations of aphids crash in most fields due to the naturally occurring fungus *Neozygites fresenii*. That was late help from Mother Nature, but we will take it. I have seen spider mites increase quite a bit lately and become noticeable again with all of the hot, dry weather. So, don't stop looking for spider mites. Plant bugs were sporadic during squaring and the first couple of weeks of bloom, but they did show up at threshold in selected fields. This clearly showed how important scouting is…you need to check every field and should not treat them all the same. Bollworm is still a no-show in my pheromone traps (see chart later in newsletter), but that might be changing soon. We should be clearly focused on stink bugs now. They are already in cotton before the 3rd week of bloom and will likely be a troublesome group of pests for the remainder of the season. Many are in and coming out of corn. Be able to recognize the immatures (see last week's newsletter). In order to use our dynamic boll injury threshold for stink bugs, you need to know in what week of bloom your field is, so be sure to note the first week of bloom for each field you scout. We define the 1st week of bloom when about every other plant has its initial flower.







STINK BUGS

Product (non-pyrethroids)	Product/acre	Lb ai/acre	Acre/gal	REI	PHI	Comments
dicrotophos **(R)** Bidrin 8 E	4.0-8.0 oz	0.25-0.5	16-32	3 d	30 d	16 oz limit post bloom; low rates for tank mix only
acephate Orthene/Acephate 97 Orthene/Acephate 90	0.52-0.77 lb 0.55-0.83 lb	0.5-0.75	- -	24 hr	21 d	
oxamyl **(R)** Vydate 3.77 CLV	13.6-17.0 oz	0.4-0.5	7.5-9.4	48 hr	14 d	
novaluron Diamond 0.83 EC	9.0-14.0 oz	0.058-0.09	9.1-14.2	12 hr	30 d	Effective on nymphs only
Product (pyrethroids)	**Product/acre**	**Lb ai/acre**	**Acre/gal**	**REI**	**PHI**	**Comments**
bifenthrin **(R)** Discipline 2 EC or Brigade 2 EC or Fanfare 2 EC or Bifenture 2 EC	2.6-6.4 oz	0.04-0.1	20-50	12 hr	14 d	Control of spider mites at high rates
beta-cyfluthrin **(R)** Baythroid XL 1 EC	1.6-2.6 oz	0.0125-0.02	49-80	12 hr	0 d	
lambda-cyhalothrin **(R)** Karate Z 2.08 CS or Warrior II 2.08 CS Karate 1 EC or Silencer 1 EC or Lambda-Cy 1 EC	1.6-2.56 oz 3.2-5.12 oz	0.025-0.04	50-80 25-40	24 hr	21 d	
cypermethrin **(R)** Up-Cyde 2.5 EC	2.0-5.0 oz	0.04-0.1	25-64	12 hr	14 d	
zeta-cypermethrin/ bifenthrin **(R)** Hero 1.24 EC	5.2-10.3 oz	0.05-0.1	12.4-24.6	12 hr	14 d	
esfenvalerate **(R)** Asana XL 0.66 EC	9.6 oz	0.05	13	12 hr	21 d	
gamma-cyhalothrin **(R)** Declare 1.25 CS	1.28-2.05 oz	0.0125-0.02	63-100	24 hr	21 d	
zeta-cypermethrin **(R)** Mustang Max 0.8 EC	2.64-3.6 oz	0.017-0.0225	35-48	12 hr	14 d	
alpha-cypermethrin **(R)** Fastac 0.83 EC	3.6 oz	0.023	35.5	12 hr	21 d	

Treat when medium-sized bolls display symptoms of feeding injury by week of bloom (50, 30, 10, 10, 10, 20, 30, 50%) and stink bugs are present. Begin scouting for stink bugs when small bolls appear. Consider using a more aggressive (i.e. 10%) threshold during weeks 3-5 of bloom, as bolls developing during this growth stage are particularly susceptible. Randomly select at least 25 bolls (at least a quarter [1 inch] in diameter) per field (add 1 additional boll for each acre exceeding 25 acres). Break each boll open and examine the carpal walls, lint, and seeds for injury symptoms. Look for the presence of warty growths on the carpal walls and for discolored seed and lint. To ensure the accuracy of this sampling method, do not deviate from weekly

checking of quarter-size diameter bolls. One may also rate an infestation based upon numbers of stink bugs by using a 3-ft beat cloth. When this method is used, an insecticide treatment will be warranted for 1 or more stink bugs per 6 feet of row. Carefully approach and shake the plants on at least 30 feet of row (10, 3-ft samples). Pyrethroids applied for bollworm control will generally provide control of stink bugs as well. Bidrin should be used in a pyrethroid tank-mix in fields with infestations predominated by brown stink bugs. Be especially vigilant for stink bugs when no treatments are being applied for control of caterpillars.

Soybean Situation

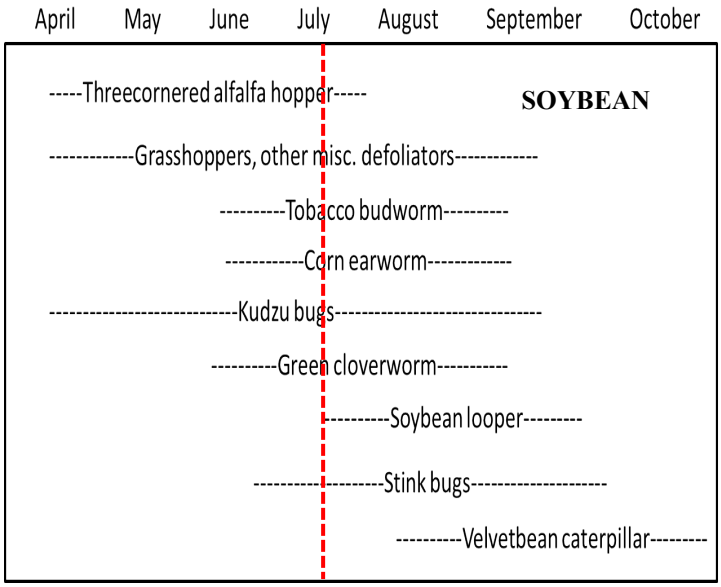
As of 14 July 2019, the USDA NASS South Carolina Statistical Office estimated that about 92% of the crop has emerged, compared with 85% the previous week, 94% at this time last year, and 94% for the 5-year average. About 14% of the crop is blooming, compared with 12% the previous week, 9% at this time last year, and 19% for the 5-year average. The condition of the crop was described as 4% excellent, 76% good, 20% fair, 0% poor, and 0% very poor. These are observed/perceived state-wide averages.

Soybean Insects

Kudzu bugs are still one of the most numerous insects in soybeans so far this season. Remember that the thresholds for kudzu bugs revolve around detection of reproduction in the field and breaking that cycle. Thankfully, kudzu bugs only have two generations per year. One or two generations can develop in soybean, but controlling them at the correct time can usually be done with one well-timed application of a pyrethroid insecticide. See the table below for thresholds:

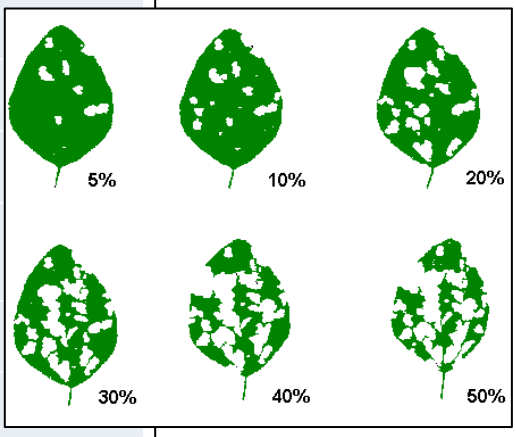
Table 1. Sampling methods and treatment thresholds for kudzu bugs in soybeans

Sampling Method	Minimum Observations	Threshold
Sweep-net (15-inch diameter)	At least 10 sweep samples representing entire field	One nymph/sweep
Canopy observation (visual)	At least 10 observation spots representing entire field	Nymphs easily found on main stems, petioles or leaves



Green cloverworms are starting to show up, and they are usually the first major defoliating caterpillar pest to show. Watch defoliation levels (see next page for guidelines on that), and be able to identify the species causing defoliation, as insecticide choice depends on the offending species, especially if soybean looper is the major culprit. Know your caterpillars (soybean looper, green cloverworm, velvetbean caterpillar, podworm, tobacco budworm, etc.), so make sure you can identify the species on the chart included in this newsletter each week. Proper identification is essential.

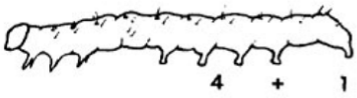
Treatment guidelines for soybean insects sampled with a sweep net.		
Pest	Number per 10 sweeps	Comments
stink bug	1-2	
corn earworm	3	or 15% foliage loss
velvetbean caterpillar	10	or 15% foliage loss
soybean looper	15	or 15% foliage loss
kudzu bug	10 (nymphs)	1 nymph per sweep
For other foliage feeders use a threshold of 30% defoliation before first bloom, 15% after first bloom.		



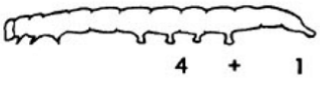
Treatment thresholds (per rowft) for insects sampled with beat cloth.					
Pest	Row width (inches)				
	38	30	21	14	7
stink bug	1	0.8	0.5	0.3	0.2
corn earworm*	2	1.6	1.1	0.7	0.4
velvetbean caterpillar	4-6	4	2.7	1.8	0.9
soybean looper	6-8	5.5	3.8	2.6	1.3
*this is the pod-feeding threshold for corn earworm					

The pictures below will help you identify damaging caterpillars and the moths that deposit the eggs from which the larvae hatch. Being able to recognize the moths is a great skill to have, as it will let you know what to expect in the coming days when eggs are deposited and start hatching. Know these major species:

FIELD KEY TO COMMON SOYBEAN CATERPILLARS

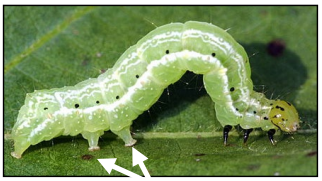


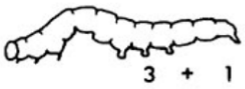
CORN EARWORM
4 + 1 pair prolegs
Curls up in hand
Black "warts" on body



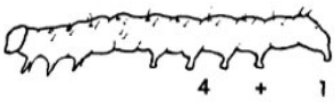
VELVETBEAN CATERPILLAR
4 + 1 pair prolegs
Very active when handled

SOYBEAN LOOPER
2 + 1 pair prolegs
Fatter at tail end
Looping movement





GREEN CLOVERWORM
3 + 1 pair prolegs
Not fatter at tail end
Looping movement



TOBACCO BUDWORM
4 + 1 pair prolegs
Curls up in hand
Black "warts" on body

(2017) Prepared by Jeremy Greene, Professor of Entomology

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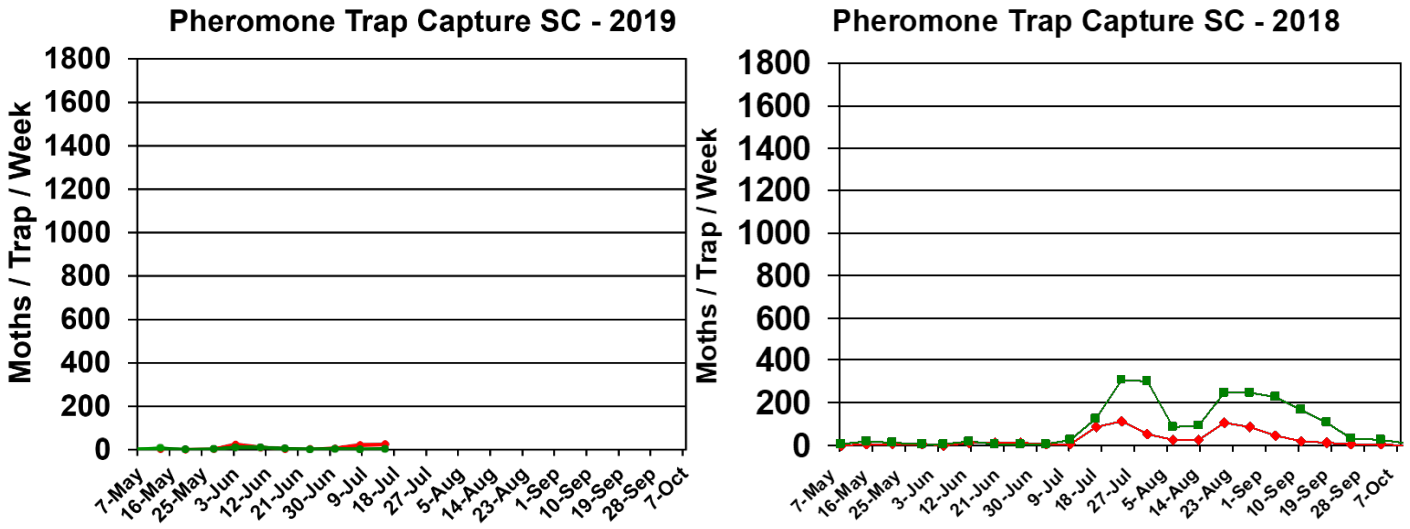
Public Service Activities

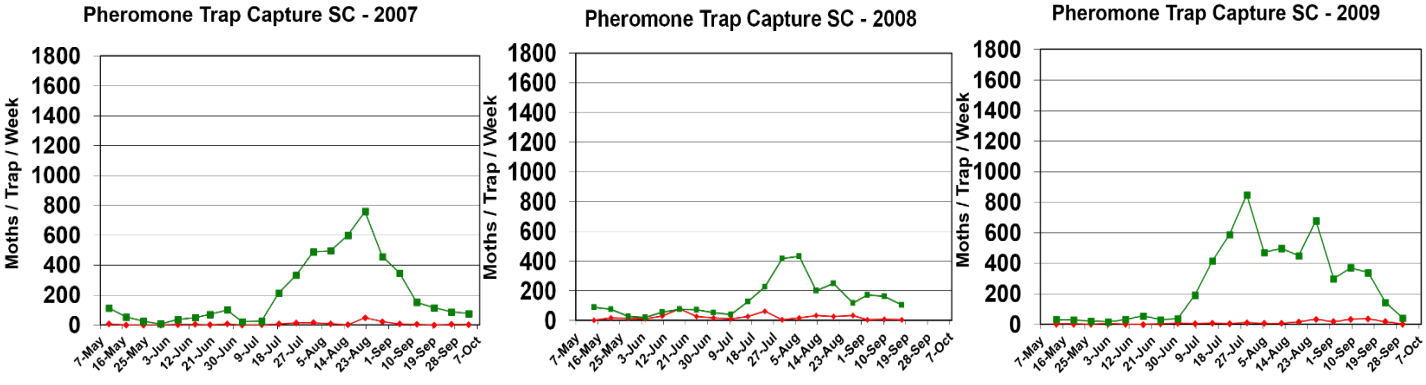
CLEMSON UNIVERSITY

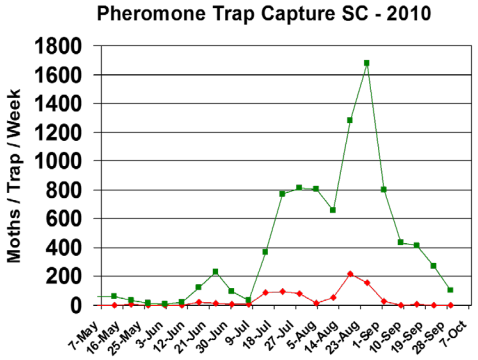
Bollworm & Tobacco Budworm

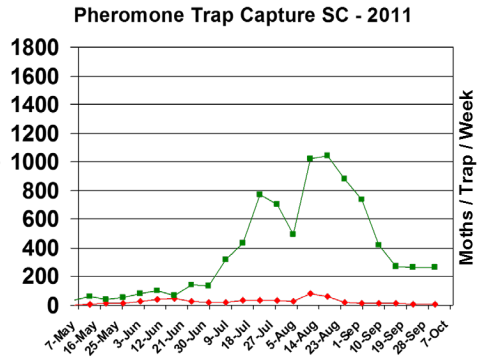
Captures of bollworm (BW) and tobacco budworm (TBW) moths in pheromone traps at EREC this season are shown below, as are the captures from 2018 for reference. Tobacco budworm continues to be important for our soybean acres and for any acres of non-Bt cotton. I provide these data as a measure of moth presence and activity in our local area near my research plots. The numbers are not necessarily representative of the species throughout the state.

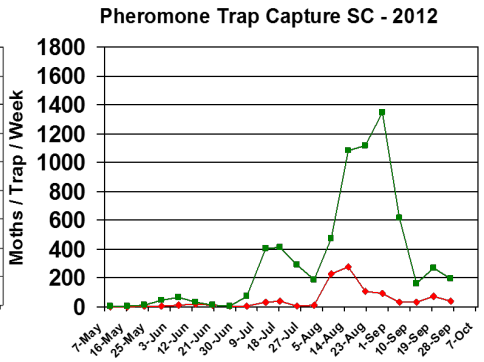


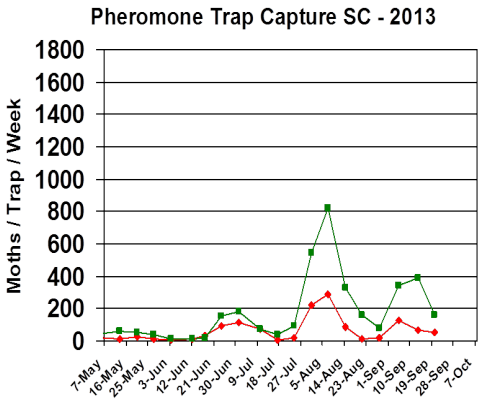
Trap data from 2007-2017 are shown below for reference to other years of trapping data from EREC:

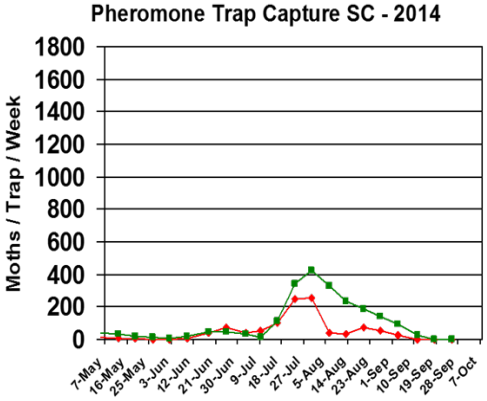


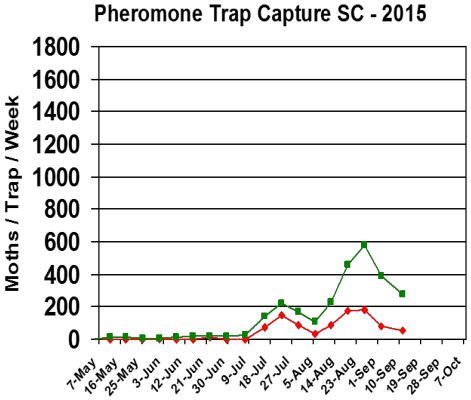


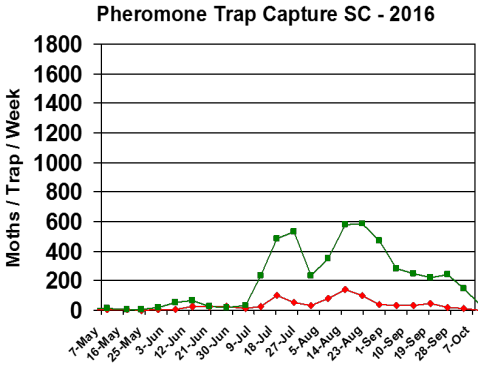


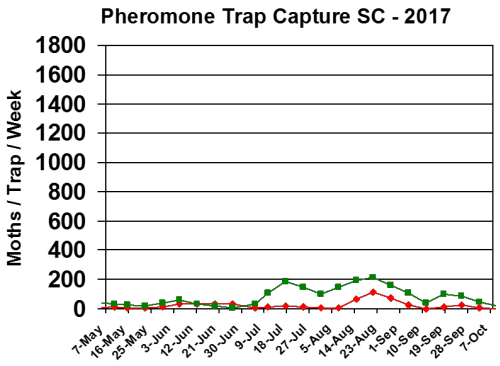








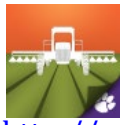




Pest Management Handbook – 2019

Insect control recommendations are available online in the 2019 South Carolina Pest Management Handbook at:
https://www.clemson.edu/extension/agronomy/pest%20management%20handbook.html

Free Mobile Apps: "Calibrate My Sprayer" and "Mix My Sprayer"



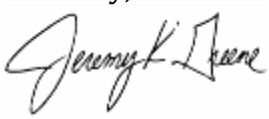
Download our free mobile apps called "Calibrate My Sprayer" and "Mix My Sprayer" that help check for proper calibration of spraying equipment and help you with mixing user-defined pesticides, respectively, in custom units (available in both iOS and Android formats):
http://www.clemson.edu/extension/mobile-apps/

Need More Information?

For more Clemson University Extension information: http://www.clemson.edu/extension/

For historical cotton/soybean insect newsletters:
https://www.clemson.edu/extension/agronomy/cotton1/newsletters.html

Sincerely,



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Professor of Entomology

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